

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DATE:

12/7/89

SUBJECT:

Suffolk County Airport Fire Training Area

FROM:

Galina Tsoukanova, Hydrogeologist
Site Investigation Section

G. Tsoukanova

TO:

Linda Comerici, Environmental Scientist
Site Compliance Branch

Attached for your review and comments on "Baseline Risk Assessment" is the report Installation Restoration Program, Suffolk County Airport, Fire Training Area, 1987. Comments on this report will be discussed at the meeting which is scheduled for December-January, 1988.

If you have any questions, please call me at x6665.

Attachment



Galina

DRAFT

Reg 12/8/87

Suffolk County Airport Fire Training Area

Galina Tsoukanova, Hydrogeologist
Site Investigation Section

Linda Commerci, Environmental Scientist
Site Compliance Branch

Attached for your review and comments on "Baseline Risk Assessment" in the report Installation Restoration Program, Suffolk County Airport, Fire Training Area, 1987. Comments on this report will be discussed at the meeting which is scheduled for ~~December~~-January, 1988.

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Attachment

Attachment A

EPA COMMENTS

Regarding Site Characterization Report Installation Restoration
Program Suffolk County Airport Fire Training Area
Westhampton Beach, New York

1. Page 27, 5.5.1, Table 5-4. An explanation is needed regarding the following: As the Report states, lead was found above the method detection limit (10) in 73 soil samples. Where are these 73 soil samples located? Why are not all of them shown on Table 5-4? There are only 34 samples in this Table with lead concentrations above DL (with duplicates and replicates together).
2. Page 38, 5.5.2. There are some discrepancies in the Report: "oil and grease contamination is presented at concentrations above 50ppb as deep as....". But the Report states that all analytical data for soil is given in "ppm". (Page 38, 5.5.2.). This should be clarified. The indication of oil and grease concentrations on Fig. 12 and Fig. 13 does not always correspond with data in the text of the Report.
3. Page 38, 41, 42, 43. (Table 5-6) The contamination of FTA area by oil and grease is characterized mainly by a few definite points where the fuels were discharged and spilled. The analytical results from JSSs and JTBs located on these particular points show more significant contamination of oil, grease, and hydrocarbons. For instance, the high concentrations for oil and grease are shown in Table 5-6 for the following shallow JSSs: 49,000 ppm for JSS-33; 27,000 ppm - 8,500 ppm for JSS-30; 23,000 ppm for JSS-11; 21,000 and 6,300 ppm for JSS-9; 19,000 ppm and 1,500 ppm for JSS-21. The profiles 5-15 and 5-16 illustrate relatively high concentrations of oil and grease in the soils of the middle depths of the following JTBs: 4,300 ppm in JTB-3 (depth = 15 feet) 3,400 ppm in JTB-4 (depth 15 feet). And finally, oil and grease were found in the soil samples in concentrations from 27 ppm to 450 ppm even below ground water level (JTB-2, JTB-4, JTB-5, JTB-9). The distribution of VOCs is similar to that of oil and grease (Fig 5-18; Fig. 5-19; Fig 5-20). Vertical distribution of xylene at depths along JTB-2 is very deep (only a few feet above water level). We believe that the possibility of migration of these contaminants into the ground water exists. The absence of hydrocarbons or PNAs in the ground water could be considered as a result of the the incomplete scope or quality of the investigation.
4. Page 41, Fig.5-15; Fig. 5-19. Was it possible to perform an analyses for VOC in soil samples below ground water, similar to it being done for oil and grease? If so, why were they not included in the scope of work?
5. Page 51; 5.5.4, Fig. 5-1. As the Report states, six soil samples (from JCP-1 to JCP-6) shown on Fig. 5-1, were analyzed for PCB/Pesticides, but none of these JCP samples were shown on Fig. 5-1. An explanation is needed.

6. Page 72, 78. It is unlikely that such contaminants like oil and grease can migrate due to wind action.
7. Page 77. If unauthorized and improper disposal of waste is suspected in spite of terminated use of FTA, perhaps improving the security of the fence around the Airport is advisable.
8. Fig. 5-12; Fig.5-13; Fig 5-14. Soil samples in the Report show the lateral distribution of such contaminants as oil and grease, hydrocarbons, and PNA at depths of no more than 4-5 feet. But at the points of repeated applications of fuels/ solvents to the soil, Fig. 5-15 to Fig. 5-22 contaminations occurred deeper and sometimes below ground water level, as it was found in JTB-2 at the depth of 35 feet. If one considers that the ground water level is located 34 feet below the surface, these contaminants may contribute to the ground water at any time. Additional ground water monitoring at and around the FTA is advisable.
9. Page 66; Table 6-2. The highest concentrations (56,000ppb and 14,000ppb) of 2-Butanone were found in deep MW-107B, which was screened at the depth of 88-103 feet deep; and 1,400ppb concentration of 2-Butanone were found in shallow MW-101B, which was screened at 34.2 feet to 50feet. However, in Appendix E the findings of 2-Butanone in these wells are shown at depths of 1.0, 1.5, 2.0. An explanation is needed.
10. Which two of all soil samples were chosen as background samples and what is the result of their chemical analyses? These background samples were included in Subtask 2A.3 - Soil Sampling, Work Plan, 1986 (page 12).
11. It is a good practice to show the oil/grease field screen results on the maps and the profiles (Fig. 5-12; Fig.5-13; Fig. 5-14). Why do similar maps and profiles for VOC's (Figures 5-18, Fig. 5-19, Fig. 5-20) lack these indications, and where, in the Report is this information?
12. The Work Plan Report, 1986, page B-3, states the neccessity to locate and describe any existing private water supply wells. They still have not been identified. It is advisable to find and present information concerning household water supply wells in the 1 mile radius in order to estimate future risk assessment.
13. Table 6-2; Fig. 6-7. Due to its density, we would not expect to find 2-Butanone in the lower portion of aquifer. Were the results from MW-107A, and especially from MW 107-B, accurate?

14. Appendix E. It is advisable to make the Tables of soil chemical analyses more readable and define data qualifiers (like B, J, and JB). The numerical order of all pages is necessary. The Appendix of the Report must be accessible for professionals as well as for the general public.
15. Appendix E. The Report states that analytical results of soil samples were taken at the surface, and at depths of 2 and 4 feet. Then why are the depths of all soil samples in Appendix E shown only as a "0" (the surface?). An explanation is needed.
16. Appendix E. In the Appendix Tables, symbols "JTB-0022; JTB-0031; JTB-0032; JTB-0041 - are used. An explanation for this Table is needed to describe what these symbols refer to. The results listed appears to correspond to locations JTB-2, JTB-3, JTB-4
17. In general this Report was not organized well. There are many discrepancies found in transferring and summarizing data from the Appendix E, to the Report itself. It is difficult to find needed data in Appendix E without numerical order of pages or Tables. The Appendix E lacks clarifications of the symbols.
The entire Appendix needs to be checked for accuracy.

Attachment B

Summary

In this Final Draft phase of the study, sufficient data to select any alternatives for clean-up actions is not available. The goal of this study - to evaluate the potential for contaminant migration and impact to receptors - is not completely achieved.

The FTA is only one part of the former AF Base area currently leased to different tenants (SCA, ANG, Private sectors).

The ANG and SCA together is a large area with small contaminated sites and landfills scattered over it as a result of past military and present civilian activities. Several of these small contaminated sites have been identified; some of them are in the process of discovery; while the finding of others is a matter of the future. Recently, from the Record Search Report (1986), we were informed of the existence of a few contaminated sites within the former Air Force Base. They are: Site-1, Site-2, FTA, and POL. Additional information about locations of 5 small sites on ANG are given in HMTG Report which has been completed as the recent Phase-1, Record Search. According to information obtained from the Department of Health Services (November 17, 1986), the plume of fuel contamination was discovered in ground water in the area of ANG.

The RI/FS study was implemented only for FTA area. The others - Site-1 and Site-2 were subjected only to a Record Search.

The soil at the FTA area and its vicinity was contaminated with lead, oil and grease, VOCs and SVOCs. According to the data presented in this Report, the level of contaminants are not high in general, but there are a few definite points with significant levels of some contaminants where the fuel and solvents were applied repeatedly. The analytical results of soil samples from borings JTB-2, JTB-3, JTB-4 are evidence to the soil contamination. The profiles (from Fig 5-15 to Fig 5-22) show the deep distribution of oil and grease, xylene, and PNA throughout all of the boring depths. Therefore, the possibility of migration of these contaminants into the ground water exists. The absence of contaminants (hydrocarbons, PNA) in the ground water analyses may be considered as a result of incomplete scope or lack of quality of the investigation.

The findings of 2-Butanone in the site ground water in deep upgradient and downgradient wells and in relatively shallow monitoring wells are the evidence of lateral and deep distributions of 2-Butanone. In spite of the fact that 2-Butanone is chosen as a main contaminant of concern, the RI did not define the magnitude, distribution, and source of the 2-Butanone ground water contamination. The risk of this contamination is not known but may exist, especially in relation to the wellfield water supply wells located approximately 0.75 miles downgradient. Further investigation is recommended.

Since the source of 2-Butanone has not been discovered, further hydrogeological investigations should cover a larger area around FTA, especially upgradient, by installing the appropriate amount of monitoring wells to adequately account for spatial variability in background water quality data.

A comprehensive hydrogeological program is needed to prove the absence or existence of a 2-Butanone plume and to outline its contours (if the plume exists). The migration of 2-Butanone must also be traced toward the downgradient ground water flow.

The hydrogeological condition of the FTA should not be considered separately without covering other nearby sites which contributed contamination to the ground water. Therefore, the full scope of work should be expanded for identifying and assessing the additional sources of contamination.

The FTA Site is a very small area within a large former AF Base. Focusing the study only on this area without considering the remaining property of recent ANG and SC Airport is not sufficient for an evaluation of the potential impact the contaminants may have on the ground water.

It is advisable to concentrate attention on the entire area of the former AF Base without dividing it into different small pieces. It is believed that soil and ground water in different points of this large area have been contaminated. One well-planned investigation should result in a realistic site characterization.

Attachment C
Risk Assessment

Summary:

We have reviewed the risk assessment presented in the final draft Site Characterization report for the subject site. In general, the Fire Training Area (FTA) is being assessed for its contribution to overall contamination at the entire facility. It is considered a semi-secure, industrial area which is no longer used for training activities, and has virtually no access by the general public. Therefore, the risk assessment considered only one potentially exposed group, the onsite workers. The major routes of exposure considered were inhalation of fugitive dust and dermal absorption of soil. Both were determined to be an insignificant risk to the workers.

Although there were inconsistencies found in the risk assessment (see specific comments), it is unlikely that these two routes of exposure would pose a significant health risk to workers. However, the major pathway of concern to the general public is the migration of contaminants through the groundwater into drinking water supply systems. This route of exposure was completely eliminated from the risk assessment due to lack of information. Potential exposure points for groundwater such as nearest potable well (private or municipal), nearest agricultural well, or industrial well were not provided. Without adequate groundwater monitoring data, an assessment of risks to the public was not made. This is an omission that the authors do recognize. Additional data should be obtained to complete this assessment. In addition, the inconsistencies in the quantitative assessment, particularly in determining risks due to dermal absorption, should be clarified. The attached specific comments should be addressed.

Detailed Comments:

1. The risk assessment assumes that construction activities onsite would be limited to a five week period. Is this accurate and will the site be secured and therefore inaccessible to all personnel, as well as the public?
2. Page 84 (11.6.1) - "USEPA guidance and scientific literature" should be referenced. The Superfund Exposure Assessment Manual (Draft-1986; Final Draft 1987) or consultation with the Exposure Assessment Group at EPA Office of Research and Development is recommended, especially in cases involving dermal exposure.
3. What is the basis of using a concentration of 1.0 ug/m^3 to represent disturbed soil concentrations of lead?

4. Page 88 (11.7.2) - As discussed in the second paragraph, the NAAQS would be used in calculating the inhalation exposure scenario, not "a given exposure scenario" as stated.

5. An accurate summary of contaminant concentrations used as input into the risk calculations is needed. For example, the PNA concentrations discussed in the first paragraph on page 86 (.076 ug/g and 9.6 ug/g) do not correspond to levels discussed in the summary of organic contaminants (Section 5.5.3) on page 38, in which the maximum level of PNA is listed as 12.2 ppm. In addition, this level (12.2ppm) does not seem to reflect the data for sample JTB-2 (JTB-002?) appearing in Appendix E. If average concentrations were used, this should be clearly stated. In addition, a worst-case risk using maximum concentrations should be done to set an upperbound risk level. It should also be noted that Table 5-8 does not reflect the concentration of phthalate found at JSS-2 (.635 ppm) which is the level reported in the text.

6. The risk calculation for dermal exposure described on page 88 (bottom) is poorly represented. Again, a clear statement of contaminant concentrations used should be presented. It is also difficult to follow through the calculations for the estimation of risk since only results are presented. Conclusions of insignificant risk from dermal exposure are stated on the top of page 89, however, there is no clear basis for this conclusion. A description of the calculation step to arrive at the final risk characterization should be provided a summary table such as Table 11-5 (page 92) which was provided for the inhalation risk estimate should also be provided for dermal exposure. The formula used to calculate dermal absorption was never clearly stated. If the inhalation exposure formula was used, the following questions should be answered: Was "fraction absorbed" (20%,40%) also used in the calculation of dermal exposure? These values were taken specifically from lead absorption (through inhalation) levels. It should be noted that the formula used by EPA for dermal absorption assumes conservatively that the entire amount of contaminant reaching the skin and adhering will be absorbed. If any other assumptions were made during this calculation, they should be stated and justified.

Soil adherence rates used in the Superfund Exposure Guidance range from 1.45 to 2.77 mg/cm² [(Harger JRE. 1970. A model for the determination of an action level for removal of creosote contaminated soil. Memorandum to P.S. Cole, Executive Director. Lansing, MI: Toxic Substance Control Commission (October 25, 1979)]; therefore, using a value of 1.0 mg/cm² may not be the most conservative estimate.

Page 88 (11.7.2) - The second sentence states that "the body dose levels of contaminants from direct contact exposure were considered insignificant based on discussions in Section 11.6.3". A conclusion of insignificance cannot be based on Section 11.6.3 since this section only discusses the calculation of body dose.

levels. There is no basis for determining what an insignificant body dose level is... the dose must be input into the calculation of risk in order to determine significance.

6. The toxicity profiles appearing in the Appendix lacked certain information. For example, xylene is described as a non-carcinogen, however, no further information is provided regarding non-carcinogenic effects.

7. Were the soil samples which were analyzed for lead filtered? If so, what size filter was used? This is an important factor which could affect detectable levels of organic forms of lead. Since it is believed that lead contamination originally existed in the organic form, which has different properties than inorganic lead, the possibility of its existence in this form should be addressed.

Suffolk Co. Air Nat'l Guard

12/10/87

Dennis Maran 516-348-2891

Suffolk Co. Dept. Health Services (Drinking Water)

Supply wells South of Airport: Old County
Road Wells 1, 2, 3.

Well #1 at 76 ft. Capacity ~~Rating~~ Rating
#2 at 70 ft. > 500 g/p/min

#3 at 160 ft. - 700 gal/per/min

Steve Cary - 516-348-2897

or Rich Markel

Suffolk Co. Dept. Health Services (Groundwater)

In process of remediating fuel plume at
western portion of airport. Plume 450' by 120'

Already spent \$100,000 on recovery

Analysis by Coast Guard Lab → 100% JP-4

W. Black

P.S. Landfill south of Airport is inactive
Town of Southampton landfill.

Suffolk County Air National Guard Base

State & County officials who wish to review the report:

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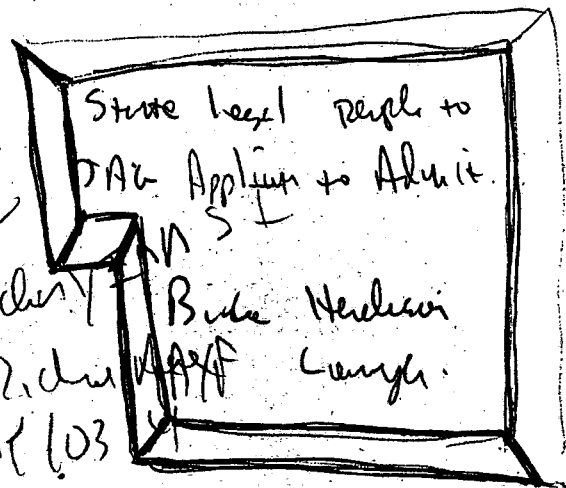
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